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ABSTRACT

The standard approach adopted in library networking or partnership models is neither developmental nor evolutionary, yet development and evolution are keys to robust, contextually responsive partnerships. Using a set of knowledge models first proposed by Owen and Wiercx, this paper argues for a new approach to the modeling of networks in which libraries enter at one point and then move along a continuum, ideally ending in an advanced, integrated knowledge environment model. In this model, libraries functions (i.e., acquisition, resource description, resource discovery, user access, and user support) develop across initial, intermediate, and developed stages according to local requirements. There is limited evidence that some library consortia in Asia are moving in this direction, but for the most part, Asian consortia and networks are of the traditional, static variety. (Contains 22 references.) (Author/MES)

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Asian library partnerships: applying the knowledge model for library networks

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Abstract:

The standard approach adopted in library networking or partnership models is neither developmental nor evolutionary, yet development and evolution are keys to robust, contextually responsive partnerships. Using a set of knowledge models first proposed by Owen and Wiercx, this paper argues for a new approach to the modelling of networks in which libraries enter at one point and then move along a continuum, ideally ending in an advanced, integrated knowledge environment model. There is limited evidence that some library consortia in Asia are moving in this direction, but for the most part Asian consortia and networks are of the traditional, static variety.

Paper

Introduction

As this paper was being prepared, Radio New Zealand hosted a discussion on the G8's recent decision to establish a Digital Opportunities Task Force that would enable the world's most disadvantaged countries to participate in the IT revolution with a view to enhancing their opportunity for development. One trenchant critic maintained that the real advantage would lie with the large multinational IT companies in Japan, the USA and Britain, who would benefit far more than any developing country by being funded to dump obsolete PC and IT systems where they are least useful. This critic went on to

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state that the real need in developing countries is not digital opportunities but more basic facilities - reliable electricity and telephone lines. This view harks back to the argument first put forth in the 1970s appropriate, not cutting edge, technology suited to local requirements.

This view is relevant to the present argument because often when we discuss networking partnerships the underlying assumption is that these are relevant everywhere, that models developed in the First World will suit places around the world, that networking is what libraries need and do. The authors of this paper have been guilty of the same assumption, as in their earlier IFLA paper (Gorman and Cullen 2000). More significantly, IFLA has seen fit to promote resource sharing (a kind of networking) without qualification as one of its professional priorities.

> IFLA serves as an international forum and advocate for sharing information in all its forms across national borders. It promotes the communication of bibliographic information which is the basis for all resource sharing, it works to develop co-operative principles for international lending, and it supports a voucher scheme to liberate lending reimbursements from national currencies. IFLA works to encourage the sharing of resources, both by supporting traditional lending and document delivery and by encouraging the development of virtual libraries whose holdings will be accessible without regard to geography or national boundaries. (IFLA's Professional Priorities 2000).

Admirable as this intention may be, it highlights one of the principal problems underlying most networking partnerships among libraries, and certainly all of those known to the authors in the Asian region. First, it is equivalent to the G8 assumption about the value of the Digital Opportunities Task Force - it must without question be A Good Thing. Second, there is no apparent recognition that each unique context significantly affects the nature of and need for networking. Third, it fails to recognise that effective networking is a step-by-step process, with institutions learning to crawl before walking, and walking before running. Finally, there is an apparent lack of planning, and all that this implies - including implementation strategies that draw on the relevant experiences of others in similar situations, and objective assessment of progress once a project has been implemented.

In our earlier paper, also presented at an IFLA forum, we argued that the growing opportunities for co-operation among libraries in Asia could be modelled to some extent on experiences and paradigms from elsewhere, with appropriate adjustments for local realities (Gorman and Cullen 2000). In particular we drew on Sinclair's typology from the 1970s (Sinclair 1973) to suggest ways in which Asian consortia/networks might be conceptualised and developed, arguing that this might be a productive approach to more effective co-operation.

Reflecting some months later on that perception and on the 'let's get on with it' impatience implicit in such statements as that from IFLA, our view has now evolved to one which maintains that it is crucial for co-operative ventures to begin by understanding the philosophy and principles underlying their desired outcomes, and only then to move on to study other co-operative ventures to see what has and has not been successful. More important, however, is our emerging view that a more appropriate model is developmental and sequential, involving institutional development internally, then externally, as a prerequisite for the network ideal of full internal and external integration into the 'knowledge economy'.

The Knowledge Model for Library Networks

In our current thinking we have turned away from Sinclair's models, which seem not to be incremental or developmental, and to a 'knowledge economy' model proposed by

Owen and Wiercx (1996). Their basic principle is one of knowledge mediation whereby the 'knowledge organisation' or library becomes expert not only in traditional means of knowledge acquisition but also in the newer areas of access and knowledge sharing.

Within the framework of knowledge mediation Owen and Wiercx have posited three application models which in our view are both sensitive to unique local conditions and flexible in their application; these are the Networked Library Model, the Co-operative Network Model and the Knowledge Environment Model. The models are developmental and evolutionary rather than fixed and static as with Sinclair, and the creators see them as complementary. 'These three models are not mutually exclusive. Rather, they describe various views of the networked library which we expect to emerge over the years' (Owen and Wiercx 1996, p. 83). In our view the models are also hierarchical, moving from simpler to more complex, and from stand-alone to mutually integrated. The following characterisation of each model is derived from Owen and Wiercx in broad terms.

The Networked Library Model

This is limited to the individual library and focuses on internal functions, systems and processes. The ideal is for the library to achieve the highest level of integrated network services internally in all three areas. Like Owen and Wiercx, we recognise that, especially in developing countries, this is a difficult ideal to achieve, but we also believe that this model '...can be used by libraries to set their own specific objectives and put them in the context of an ideal situation' (Owen and Wiercx 1996, p. 84). In this model the library is independent and self-sufficient, and it either possesses or seeks to develop all or most of the functions needed to provide full services to users without relying on other libraries.

In this model the library is assumed to consist of five components at varying stages of development:

- Storage facilities for conventional and electronic resources
- Integrated resource discovery system (catalogue)
- Support system providing any type of assistance required
- Workstations allowing users to access catalogue, resources, support system
- Administrative system.

The entry point to the library is through a user-oriented system which offers two types of services. The first of these is knowledge mediation: 'functions which allow the user to identify, locate and obtain knowledge resources. The knowledge mediation service provides the user with a view on available knowledge resources and the means to acquire them' (Owen and Wiercx 1996, p. 86). The second is user support: 'functions which assist the user in using knowledge mediation functions. The user support system provides the user with a view of the library itself, the way it is organised, how to use functions and systems, the rules that have to be adhered to, etc.' (Owen and Wiercx 1996, p. 86). The emphasis is on an integrated approach to systems, with resource discovery as the primary goal.

'The model of the fully networked library...is based on the assumption that individual libraries will create their own collections..., create bibliographic data for internal and external resources, provide their own document delivery services for end-users' (Owen and Wiercx 1996, p. 102). Note that the library is expected to creating its own collections, providing its own bibliographic control, its own access services - a network or partnership is not a way of avoiding these responsibilities, and in fact a library network is only as strong as its weakest player. The library as a network in its own right is a key to effective external networking, because it creates an internal culture in which all components are working for the same goal - resource discovery and utilisation; from

this internal culture, it is then not such a major step to move on to external networking and co-operation.

In our view this primary network, and the attitude which it embodies, cannot be too strongly emphasised - and we would also stress that in many institutions it does not exist. Divisions within libraries jealously guard their territory, work is often duplicated because sections cannot agree on a single standard, etc. Many examples could be presented of this, from major national libraries down to local branches of a public library service. When integration works, it works well, and a culture is created in which a library service is able to move into other models from a position of strength. If we do not understand ourselves fully, and if we are unable to agree on a unified vision and mission, how can we co-operate effectively without significant loss of services and customer satisfaction?

The Co-operative Network Model

In the second model many of the networked library functions can be distributed among libraries or library organisations '...in a way which makes more efficient use of resources on a national scale and which allows a larger number of libraries to offer networked services to their users' (Owen and Wiercx 1996, p. 102). Again this model deals with systems, functions and processes, in particular resource description, resource discovery, resource storage, and user support. It is important to note that this model does not come into play until the individual library or libraries fit into the previous, baseline networked library model.

Own and Wiercx use the client-server metaphor to describe the relationship in which some libraries concentrate on serving their own, individual users, and others have a wider function in providing services to parts of the library community. 'Server libraries' offer services to other libraries, usually with a specific domain or for a specific type of library. Those who receive these services are the client libraries. 'The metaphor is useful, since it includes the notion that the client-server relationship is based on close co-operation, a division of functionality and the mutual acceptance of standards' (Own and Wiercx 1996 p. 102)

Server libraries take on the task of developing networked services in a specific subject domain (social sciences, engineering, etc) or serving as a national service covering all domains. They do this as an extension to their traditional services developed in the networked library model. Client libraries, in contrast, do not develop full-scale services in areas covered by domain-based or national server libraries; rather they act as an interface to these server libraries.

In the domain approach, libraries are assigned tasks on a domain basis and for each domain the library develops a comprehensive service covering resource description, discovery, storage and user support. The national service approach works only in smaller countries; it implies that one, usually national, library, or a small number of co-operating libraries, provide a national service to which other libraries inter. The functions performed by the national service cover the entire range of resources.

The client-server approach, however, is only part of the development of a co-operative network model. In fact a fully co-operative model '...should be based on co-operation in the creation and management of resources, as well as on shared use of resources' (Owen and Wiercx 1996 p. 104). The steps involved in the development of this model are

- Shared cataloguing of resources
- Shared collecting and storing of resources
- Shared resource discovery system
- Shared document delivery procedures

- Shared licence agreements
- Shared user support procedures.

Again, it is important to emphasise that this is a full service, not a piecemeal one, yet it is in fact the piecemeal approach which characterises most networks in Asia, as indeed elsewhere. Networking partnerships have not yet recognised the value of an integrated, knowledge economy approach to co-operation, but instead have a limited, tentative vision. They focus on selected services, and often without their members having achieved anything like the networked library model which we perceive as the essential first stage in effective networking. For example, the Delhi Library Network (DELNET) promotes resource sharing in libraries in and around Delhi. It is networked via an online union catalogue containing MARC-based, standardised bibliographic data for books and serials. DELNET provides network support, shared cataloguing, training, current awareness and SDI services, interlibrary loan, document transfer and copying services, and access to local, national and international databases (Kaul 1999). But note that there is no mention of shared collecting and storage, shared licence agreements or shared user support. With the best will in the world, therefore, DELNET cannot achieve its full potential because it is overlooking, perhaps purposely because of insurmountable political problems, some of the key components in a co-operative network model. DELNET is singled out not because it is unique in this regard, but rather because it has been open enough to share information about its strengths and weaknesses.

Other partnerships may be seeking to achieve more, or at least understand the evolutionary nature of their work. In Thailand, for instance, two existing networks (THAILINET, a network of online catalogues of academic libraries in the Bangkok region, and PULINET, the grouping of provincial academic libraries) have now joined forces to form ThaiLIS, which is the backbone of a national resource-sharing system that will include a document delivery system and a digital collection available to all members. (Bhakdibutr and Keesiri 1999) However, co-ordinated collection management is not a feature of ThaiLIS (Premsmit 1999).

Our argument is that individual libraries within DELNET and ThaiLIS ought first to achieve the features proposed for the Networked Library Model, and then the networks themselves ought to look to the standards suggested in the Co-operative Network Model. Then, building on the strengths of these two models, the networks could move to the more advanced system, the Knowledge Environment Model.

The Knowledge Environment Model

In the previous two models focus is on the knowledge mediation process and the specific library systems and functions needed to effect mediation. The knowledge discovery system in these models is the key component for acquiring, discovering and accessing knowledge resources. By contrast he Knowledge Environment Model focuses more on a user-oriented perception of the library or network - on what people will find and do in the library - than on the way in which the systems and functions are organised. It is this much less system focused, and more client focused. Other models tend to ask how co-operation can improve this or that specific function in isolation from other functions. The Knowledge Environment Model looks at the full range client needs and resource requirements and asks how co-operation can improve services to meet these needs and requirements. It recognises that there is diversity in user expectations, and also diversity in user skills. Given this diversity, the Knowledge Environment Model seeks to offer both a sophisticated technological environment and also a more traditional set of services.

As Owen and Wiercx (1996, p. 107) characterise this model, it treats the library/network as a public information area which allows for a variety of information-related activities for different user groups. The network therefore needs to operate internally, providing

interlinked access to all local resources (a feature of the Networked Library Model); it also operates externally, providing total access to the global information infrastructure through a network-wide resource discovery system and to the Web. It serves as an access point to community and government information services locally, nationally, internationally, and all functions are available to users in any part of the network on an equal basis. Significantly, in achieving these goals the network takes precedence over the individual members, and members sacrifice a certain amount of autonomy to the good of the network as long as that good is achieving better quality resource discovery, access and utilisation for all members. This is an ideal to be achieved, although in our view no network has yet been so fortunate.

Stages in the Development of Networks

Participation in and success of any model does not merely happen. In the knowledge environment approach it is appropriate to think in terms of a developmental path, with libraries and networks moving through stages of applications in a variety of functions, and not necessarily at the same speed. Rather, the functions develop across stages according to local requirements.

The three stages are:

Initial, Intermediate, Developed.

In each stage there are five functions that the network seeks to perform, in each instance ensuring that the functions are responsive to user requirements rather than system demands:

- Acquisition
- Resource description
- Resource discovery
- User access
- User support.

The stages and functions are combined in a developmental matrix (Figure 1), with libraries and their networks moving from Initial to Intermediate to Advanced in each function as circumstances warrant. It is not intended that a library or network opt for a particular stage and then settle comfortably and permanently into that niche; rather the mission is always to move forward to a higher, more advanced level of networking. Each stage in Figure 1 is equivalent to one of the models previously discussed:

- Initial Stage = Networked Library Model
- Intermediate Stage = Co-operative Library Model
- Developed Stage = Knowledge Environment Model

Functions	**Initial**(Networked Library Model)	**Intermediate**(Co-operative Library Model)	**Advanced**(Knowledge Environment Model)
Resource acquisition	Printed documents CD-ROMs Some dial-up connection	More offline e-resources Access by networked workstations	Full remote access to resources Dedicated Internet links Most materials in e-format
Resource description	Manual cataloguing Some shared systems (OCLC)	Catalogues supplemented by resource lists of networked materials Structured bookmark lists	Integrated resources discovery system Metadata used comprehensively
Resource discovery	OPAC on PC Bibliographic data describe mainly printed resources	Local e- and networked resources included in OPAC	Full network access to all internal and external e-resources Integrated resource discovery system
User access	On-site Limited delivery	Remote catalogue access E-mail delivery	Full on-site and remote access On-site access not necessary
User support	Library staff give face-to-face service	Users can access system offering some help E-guide to library E-mail queries	Human support + full computer-assisted support for information discovery and access process

Figure 1. Functions and Stages in the Network Models

Our research for this paper indicates that no network in the Asian region has achieved the advanced stage of the Knowledge Environment Model. There is one, however, that appears to be moving in this direction, the China Academic Library and Information System (CALIS). Launched in the first half of 2000, CALIS is a nation-wide academic library consortium which links services across 27 provinces and cities in China (Dai n.d.). To facilitate management of such a large endeavour it is divided into 5 national information centres, 2 regional information centres and 70 member libraries. The five national information centres, supported by full-time staff from the libraries in which they are situated, have responsibility for specific subject areas based on the existing strength of their collections (the domain approach discussed in the Co-operative Network Model). They are also responsible for importing and hosting databases in their subject area and making the resource available to all members. This includes searching and document delivery.

The agreement governing CALIS activities emphasises the interests of the consortium above those of member libraries (a key principle of the Knowledge Environment Model), and is based on the ideal of contributions according to size, but with equal benefits to all. The intention is that co-ordinated purchasing of materials, standardisation of hardware and software will unify the entire system and enable it to deliver some of the major international online bibliographic and full-text sources to all members, along with local databases of library holdings, Chinese dissertations and conference proceedings, an index to current Chinese periodicals, and key discipline-based databases - in short, many of the features expected of the Knowledge Environment Model. However, and this throws CALIS back to the Initial Stage in many respects, lack of standardisation of software, hardware and bibliographic data among member libraries, and the need to build adequate local collections, still inhibit this goal. Once again, therefore, one can see that failure to understand the incremental approach to network

building has caused serious shortcomings in CALIS. If, on the other hand, individual members could go back to the Networked Library Model, put in place protocols for effective internal networking (especially adequate local collections), move on to the Co-operative Network Model and develop agreed standards in terms of software and hardware, CALIS would then be in a position to take full advantage of the Knowledge Environment Model, and perhaps become an Asian leader in this regard. The same might apply to any of the existing networks in Singapore, Hong Kong, Malaysia, Thailand or India which are sitting precariously somewhere in the Co-operative Network Model, although few of these seem as far-sighted as CALIS.

Conclusion

In most developing countries information professionals agree that it is important not to lose the richness, diversity and values of the traditional library service as we move into an electronic future. In saying this, however, librarians tend to be relying on certain models that may no longer be robust enough to deal with the emerging reality of global electronic information networks. For example, the 'holdings' model so long dominant in the academic library sector has effectively maintained traditional values of libraries and librarianship, but has largely failed to meet user needs in the new environment. Likewise, the 'systems' model might have been valuable in teaching us that the library is a process and not a static organisation, but it has failed to grasp the meaning of libraries in a broader, more competitive information arena.

By drawing draw upon knowledge models that have been developed in the context of the knowledge economy, particularly by Owen and Wiercx (1996), we may be able to overcome what appears to be a stalemate in terms of network development in Asia. What emerges from these models is the library as an 'expert intermediary' that is not in competition with other, more powerful information providers but that complements them by serving as a user-friendly interface between information clients and information providers. In these models the library is viewed not as the centrepiece in information transfer, but as one player in the conversion process, along with the Internet, community information services, the IT industry, commercial information aggregators, government agencies and other resource-rich entities. By replacing competition with co-operation we may be able to provide high quality resource acquisition, resource description and resource discovery services to users of all types.

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